

A METHOD FOR COMBINED USE OF A LOCAL RTK SYSTEM AND A REGIONAL, WIDE-AREA, OR GLOBAL CARRIER-PHASE POSITIONING SYSTEM

The present invention includes a method for a combined use of a local RTK system and a regional, wide-area, or global differential carrier-phase positioning system (WADGPS) in which disadvantages associated with the RTK and the WADGPS navigation techniques when used separately are avoided. The method includes using a known position of a user receiver that has been stationary or using an RTK system to initialize the floating ambiguity values in the WADGPS system when the user receiver is moving. Thereafter, the refraction-corrected carrier-phase measurements obtained at the user GPS receiver are adjusted by including the corresponding initial floating ambiguity values and the floating ambiguity values are treated as well known (small variance) in subsequent processes to position the user receiver in the WADGPS system.